



Review

Addressing Attrition from Psychotherapy for PTSD in the U.S. Department of Veterans Affairs

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Abstract: The United States Department of Veterans Affairs (VA) uses a systematized approach for disseminating evidence-based, trauma-focused psychotherapies for post-traumatic stress disorder (PTSD). Within this approach, veterans with PTSD must often choose between Prolonged Exposure (PE) and Cognitive Processing Therapy (CPT), each delivered in their standard protocols. Many veterans have been greatly helped by this approach. Yet limiting trauma-focused therapy to these two options leaves the VA unable to fully address the needs of a variety of veterans. This limitation, among other factors, contributes to the suboptimal attrition rates within the VA. The present review proposes solutions to address treatment barriers that are both practical (such as time and travel constraints) and psychological (such as resistance to trauma exposure). By reducing barriers, attrition may lessen. Proposed countermeasures against practical barriers include intensive protocols, shortened sessions, telehealth, smartphone application delivery, or any combination of these methods. Countermeasures against psychological barriers include alternative evidence-based treatment programs (such as Acceptance and Commitment Therapy), intensive protocols for exposure-based treatments, and the integration of components from complementary treatments to facilitate PE and CPT (such as Motivational Interviewing or family therapy). By further tailoring treatment to veterans' diverse needs, these additions may reduce attrition in VA services for PTSD.

Keywords: post-traumatic stress disorder; attrition; veterans affairs; military; trauma-focused psychotherapy; trauma; intensive protocol

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1. PTSD in Veterans of Military Service

Post-traumatic stress disorder (PTSD) is a psychological syndrome that may develop after exposure to an event involving the perceived danger of death or sexual violence (i.e., a trauma). Such situations include near-death experiences, sexual assault, or witnessing the death of a beloved person, among others. A diagnosis of PTSD requires a specific set of enduring and interfering symptoms resulting from a trauma, including mental intrusions, avoidance, arousal or reactivity, and negative mood changes (*Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision [DSM-5-TR]*) [1]. Unfortunately, veterans are particularly at risk of experiencing trauma both during and outside of their military service. In a survey of 3157 veterans, 87% reported experiencing at least one potentially traumatic event in their lifetime [2]. Results showed a mean of 3.4 traumatic events per veteran ($SD = 2.8$). Such events include military combat, the sudden death of a close friend or family member, witnessing death and injury, and military and non-military sexual trauma [3].

Although veterans may experience trauma of all kinds, participating in combat bears a particularly high likelihood of traumatic events. The duration and intensity of traumas experienced in combat are often associated with elevated levels of PTSD symptoms [4–6]. Those who have had extensive combat exposure are also thought to be around 25–35% more likely to develop PTSD [2]. Furthermore, the uniqueness of combat can result in symptoms specific to the battlefield [7]. Thus, combat-related PTSD differs from PTSD seen

in other populations [5]. However, despite differences in individual symptoms and their severity, combat-related PTSD and non-combat PTSD are usually addressed with the same treatments [8–10].

Fortunately, such treatments for PTSD have significantly improved in recent decades. Even so, the wars of the past 25 years have subjected U.S. soldiers to types of physical and emotional traumas that can cause PTSD at especially high rates. Veterans of military operations such as Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) faced unique stressors, including improvised explosive devices (IEDs) and multiple combat tours. These factors have led to a greater severity of PTSD than that observed in the Vietnam War [11,12]. General estimates for the prevalence of PTSD in Iraq and Afghanistan veterans are around 23% [13]. Thus, the need for efficacious PTSD treatment among veterans is as high as ever—if not higher.

2. Current Trauma-Focused Psychotherapies Offered by the Department of Veterans Affairs

Currently, the VA offers several specific psychotherapies to treat PTSD [9,14]. Broadly, VA psychotherapies can be categorized as trauma-focused or non-trauma-focused therapies. Trauma-focused therapies concentrate on processing traumatic events. They involve patients willingly engaging with trauma-related memories, beliefs, and cues/triggers in some way. This engagement can be performed through any combination of behavioral, cognitive-behavioral, or emotion-focused strategies [9]. On the other hand, non-trauma-focused psychotherapies do not engage with the traumatic event itself. Instead, they focus on veterans garnering support and empathy, understanding/insight, and adaptive response patterns in ways that are not directly related to trauma stimuli [15]. Current non-trauma-focused therapies offered by the VA are Stress Inoculation Therapy (SIT), Present-Centered Therapy (PCT), and Interpersonal Psychotherapy (ITP). The VA also offers Cognitive Behavioral Conjoint Therapy (CBCT) for couples, helping partners understand and manage the impact of PTSD on their relationship. Some of these psychotherapies tend to be used if patients are unwilling to engage with their trauma directly. A sequential combination of any of these therapies may be used, as veterans can generally receive treatment for as long as they need. Although trauma and non-trauma-focused therapies can both achieve beneficial results, trauma-focused therapies have been demonstrated to be significantly more efficacious [16–18]. Given the evidence, the VA's 2023 clinical practice guidelines strongly recommend the use of trauma-focused therapies (such as PE and CPT) over non-trauma-focused therapies [9] (pp. 48–50).

Thus, veterans with PTSD are most often best served with some degree of trauma-focused intervention. Yet patient attrition from trauma-focused therapies at the VA is an area for improvement [19]. This review aims to specifically address needs and solutions for retaining veteran patients in trauma-focused treatments specifically. Unfortunately, the VA's distinct divide between non-trauma-focused and trauma-focused treatments may leave little room for “middle options”—options that could foster eventual or gradual engagement with trauma content.

3. Dissemination of Evidence-Based Psychotherapies

Within the category of trauma-focused therapies, the VA system offers Prolonged Exposure (PE), Cognitive Processing Therapy (CPT), Written Exposure Therapy (WET), and Eye Movement Desensitization and Reprocessing Therapy (EMDR). However, substantial evidence demonstrates that not all treatments have been equally disseminated. Although different therapies may be disseminated to differing degrees at different VA sites, PE and CPT markedly predominate. VA efforts to disseminate evidence-based psychotherapies (EBPs) began in 2005. These efforts were guided by the Veteran Health Association's (VHA) plans to reform its mental healthcare system broadly. Based on the evidence at that time, only two psychotherapies were recommended for the treatment of PTSD: PE and CPT [20]. Following development and testing, initiatives to disseminate CPT began in 2006, followed

by PE in 2007. An exceptional amount of support from the VA in the speed and degree of training resulted in 96% of VA facilities providing either PE or CPT within two to three years [21]. Access to both therapies appears to continue to the present day. They are the only two PTSD-specific therapies that VA clinics have been required to offer per VHA guidelines [20,22,23]. To the VA's credit, the provision of these psychotherapies has helped a great many veterans recover from PTSD and other concerns. The efficacy of PE and CPT for reducing PTSD symptoms is clearly supported by meta-analyses examining many trials (e.g., Asmundson et al.; Powers et al.) [16,24,25]. PE and CPT also reduce suicide risk among veterans by reducing suicidal ideation [26]. Yet the focused, widespread dissemination of mostly PE and CPT leaves many patients with a limited choice of trauma-focused treatments. The present review will first examine the nature, efficacy, and acceptability of these two psychotherapies. Along with their merits, we will then identify gaps in their ability to overcome veterans' practical and psychological barriers to treatment. Lastly, we will propose several possible solutions to these barriers.

3.1. Prolonged Exposure (PE)

Prolonged Exposure is a type of cognitive-behavioral therapy (CBT) derived from the Emotional Processing Theory (EPT). EPT posits that trauma-related stimuli activate emotional and cognitive networks that contain information about the meanings of various stimuli and responses. These networks predominantly rely on the processes of classical conditioning. Within the networks are various associations between aversive or threatening unconditioned stimuli (US) and associated, previously neutral conditioned stimuli (CS). According to EPT, danger associations remain in the fear network until fear-inconsistent safety evidence becomes available. Engagement with objectively safe trauma-related stimuli—*exposure*—provides this evidence. When this happens, new associations and safety meanings can be formed that inhibit the prior ones. However, this loss of fear can only occur if the underlying emotional networks are activated and the new information is inconsistent with previous beliefs (“disconfirming evidence”) [27]. Note that EPT was updated in 2006 [28], although many scholars incorrectly refer to the 1986 theory [29]. The updated EPT includes (1) the formation of new memories inhibiting older memories in the fear structure, as well as (2) the importance of engaging with disconfirming evidence [28].

Thus, PE aims to provide patients with new learning opportunities to create more accurate associations. This is achieved through four treatment components: psychoeducation, imaginal exposure (i.e., vividly recalling the trauma events), in vivo exposure (i.e., approaching feared-yet-safe stimuli associated with the trauma), and breathing retraining [8,30]. Throughout the treatment, a strong emphasis is placed on reducing the avoidance of trauma stimuli and stopping the suppression of related psycho-emotional content. For patients, treatment involves directly remembering and discussing their trauma in sessions, often with emotional intensity. Outside of sessions, they also listen to their trauma narratives at home, engage in in vivo exposures, and complete other between-session assignments. The treatment itself is manualized and follows a step-by-step protocol which—in its current, traditional form—takes eight to fifteen one-on-one sessions, each lasting around 90 min. Due to its high efficacy (see meta-analyses by Cusack et al. [16] and Powers et al. [25]), PE was one of the two psychotherapies selected by the VA for widespread dissemination [8,20].

3.2. Cognitive Processing Therapy (CPT)

Cognitive Processing Therapy (CPT) is a type of cognitive therapy grounded in both the information-processing theory and the social-cognitive theory of PTSD [31]. The information-processing theory posits that PTSD develops from cognitive fear networks that lead to avoidant behaviors. This first theory undergirds an optional trauma narrative exposure component of CPT (yet in vivo exposure is not part of CPT's protocol). The social-cognitive theory of PTSD focuses on how trauma is processed and coped with by an individual attempting to recover. Thus, it is concerned with (1) the content of trauma-

related cognitions, such as beliefs about the trauma, other people, or the world, and (2) the effects of these thoughts on emotional, physiological, and behavioral responses. According to the theory, affective components in trauma memories are changed by forming new beliefs and emotional responses that alter prior maladaptive responses. In CPT, patients work towards forming more accurate, comprehensive, and adaptive trauma-related memories and beliefs. When such trauma-related content is changed, their consequent trauma-related emotions (such as fear) and other cue responses are expected to lessen [31].

Accordingly, CPT utilizes psychoeducation, written accounts of beliefs resulting from the trauma, and cognitive techniques to recognize and challenge beliefs [32]. Treatment involves weeks of in-session discussion of their trauma and trauma beliefs, as well as near-daily trauma-related practices and assignments outside of sessions. Like PE, CPT is a manualized treatment completed over approximately 12 individual weekly sessions. Each session lasts from 60 to 90 min. Similar to PE, it was selected by the VA for widespread dissemination due to its high efficacy in research trials [8,16,24].

4. Attrition from Trauma-Focused PTSD Treatments at the VA

Both PE and CPT have been shown to be highly successful at reducing PTSD symptoms under controlled laboratory conditions [33–35]. It is very clear that they have meaningfully benefitted many veterans, both within and outside of clinical trials. However, these high-effort therapies come with a notable caveat: Treatment only works well if the individual sufficiently participates in the therapy—attending and actively engaging in its sessions across months and undertaking its demanding tasks. This heavy burden of practical and emotional difficulty is an ongoing problem with PE and CPT. Although there is much to be said for a “no pain, no gain” model of recovery, the demand may be too high for many veterans. Edwards-Stewart and colleagues (2021) reviewed 26 studies that examined attrition rates (degree of “dropout” from therapy) within veteran populations. They discovered that trauma-focused treatments such as PE and CPT had attrition rates of approximately 27.1% [19]. These rates may be even higher in the real world, given the complexity of uncontrolled, natural conditions without the incentives of research. As a striking example, Maguen and colleagues (2019) examined attrition rates at a single Veteran’s Health Administration facility under normative conditions. From October 2001 to September 2015, they discovered that just 22.8% of veterans initiated evidence-based psychotherapy such as PE or CPT. Of this sample, only 9.1% completed treatment. Based on their criteria, they calculated an attrition rate of greater than 60% [36]. Although treatment attrition is a risk to all treatments, it is a significant issue when veterans’ primary available treatment options consistently yield high rates [37]. Thus, if veterans want to directly address their PTSD through therapy, they are faced with participating in treatments that a significant portion of them will not complete or—for many—even initiate.

4.1. Factors Influencing Treatment Attrition

Numerous studies have examined why veterans choose to terminate treatment prematurely. Many of these factors are related to the therapeutic process and relationship, such as poor therapeutic alliance, patients’ perception that treatment oversimplifies their distress, and a general disconnect between therapists and clients [38]. Though such factors can lead to dropout, they are not unique to trauma-focused PTSD treatments [39]. Furthermore, because they are not necessarily caused by the VA’s dissemination model, they cannot be addressed by individualizing or increasing the number of treatments available [14,40]. However, the VA’s limited trauma-focused treatment options *are* specifically related to other treatment barriers [37,41]. By reducing such treatment barriers, the VA may reduce veteran attrition.

4.2. Practical Barriers to VA PTSD Treatment

Practical barriers to trauma-focused therapies have to do with stressors that increase the difficulty of presenting to treatment and/or fully engaging in its procedures. These

stressors include traveling to therapy, finding the time to attend therapy sessions, and time and resources for therapy homework tasks, among others. Veterans' work may make attending treatment difficult, especially when employed in the civilian sector after leaving the military. Many do not have the luxury of living near their local VA outpatient clinic or having flexible work hours. Hundt and colleagues [42] interviewed 28 veterans who had been accepted for PE or CPT treatment but declined to participate. Among other reasons, many veterans stated that they simply could not take time off from work and had issues traveling to and from treatment [42]. Additionally, many veterans who retire from active-duty service have families for whom they must take care and/or financially support. This care requires resources, time, and energy that could otherwise be used for the veteran's own therapy and associated tasks. A theme consistently appearing in literature exploring practical barriers for veterans is their tendency to prioritize families over themselves. A veteran who participated in Hundt et al.'s study told the interviewers, "When it came to the point where it was jeopardizing my job, you know, the therapy comes later, man. I gotta get paid" [42] (p. 417).

When faced with having to choose between having their PTSD treated or being unable to provide for themselves and their loved ones, many veterans will ultimately choose the latter option. For some veterans, these issues may not present a significant problem. However, not all veterans suffer from similar traumatic experiences nor have the same symptom severity and coping skills [2,5,40]. Studies examining the differences between veterans who were able to complete treatment and those who dropped out concluded that, among other factors, treatment completers coped better with stress. Veterans who dropped out were overwhelmed with more minor stressors and chose to prioritize daily obligations over treatment [37]. Thus, when veterans are under high stress, even lower-level stressors can be overwhelming, resulting in attrition from treatment.

4.3. Psychological Barriers to VA PTSD Treatment

In addition to practical factors, stress and emotions stemming from treatment itself can also cause veterans to discontinue therapy. Given that PE and CPT are trauma-focused treatments, they tend to create short-term distress and discomfort by design. The experience and processing of negative—and often intense—emotions is a key element of successful trauma-focused work [27]. Although these aversive states eventually lessen, leading to longer-term benefits, it takes time. Repeatedly subjecting oneself to painful traumatic memories and stimuli can cause veterans to drop out of treatment before achieving hard-earned gains [12,42].

4.3.1. Avoidance

PE and CPT aim to help patients habituate to trauma-related stimuli and learn new safety information about them [27,31]. Yet this can only be achieved by confronting the traumatic memories and stimuli directly. A common human response is to do the opposite, avoiding any stimuli associated with perceived danger or distress. This natural avoidance motivation is a major barrier to exposure. Many veterans will choose not to participate in PE and CPT because of the exposure elements required. In interviews with veterans who have turned down treatment, researchers found that many feared what would happen if they re-experienced the trauma. Additionally, veterans who had attempted treatment but dropped out said they did not think they could adequately handle the pain again [42]. As a result, many veterans may choose to live with PTSD because they do not wish to re-experience the pain and distress, even if it may solve their problems in the long term.

Avoidance is certainly not limited to refusing to attend therapy. Avoidance across life can be behavioral (e.g., declining social invitations) or psycho-emotional (e.g., suppressing unwanted thoughts and feelings). When a person has experienced trauma, the most common course of behavior is to gradually process the event, coming to terms with it over time. For example, some may seek support from their loved ones, discuss the event, and pursue insight about what happened. Yet others may adopt maladaptive coping strategies, such as

alcohol and other substance use, or avoid reminders of their experience [40]. Some veterans may purposefully aim to numb emotions when presented with trauma-related stimuli—a form of avoidance. Many providers have described patients who dissociated, numbed emotions, and/or actively distracted themselves during exposure exercises [43,44]. Since the success of exposure depends on accessing and experiencing fear, numbing emotions may render such treatments largely ineffective [27].

4.3.2. Perceived Lack of Treatment Efficacy

Because PE and CPT require active and deliberate participation from patients, avoidance can delay treatment gains. Even when progressing by their intended timeframes, PE and CPT last upwards of eight and twelve weeks, respectively [8,31]. Significant improvements are typically not seen before the fourth or fifth sessions—over a month into treatment [45]. Veterans dutifully taking the time and effort to complete distressing homework assignments may become discouraged by a lack of results. As a result, they may choose to drop out. This issue may be further exacerbated if they believe that a temporary worsening of symptoms indicates treatment is not working [38,42].

4.3.3. Treatment-Related Secondary Effects

The exposure components of PE and CPT are known to cause a temporary escalation in symptoms for some patients [27,31,37]. Even if trauma is only directly addressed during therapy tasks, this work can lead to negative emotions, intrusive thoughts, lessened concentration, physiological arousal, and other secondary effects at later times. As a result, many veterans worry about how their symptoms may impact them outside of treatment, both psychologically and practically. Reflecting on their therapy's intensity, some veterans have stated that they feared becoming depressed, harming themselves or their loved ones in some way, or relapsing with substance use [37]. Others were worried about these side effects impacting their ability to fulfill important obligations, such as work. Given that many veterans cannot afford to "put their life on hold" while attending treatment, a treatment's interference with daily functioning can be a significant concern.

5. The Need for Treatment

After acknowledging the obstacles veterans must overcome to recover from PTSD, one may wonder whether it is worth presenting to therapy. Unfortunately, PTSD is unlikely to remit sufficiently without treatment. Morina and colleagues [46] conducted a meta-analysis of 42 studies examining long-term outcomes for untreated PTSD and found that only 44% of individuals remitted. When they did, the average time it took for this was 3.33 years. Similarly, Kolassa and colleagues [47] examined the long-term outcomes of 444 refugees of the Rwandan conflicts of the early 1990s. Such individuals were exposed to severe physical and emotional trauma, witnessing bombings and murders—stressors not unlike those seen on the battlefields of Afghanistan and Iraq. The authors found that higher trauma exposure was associated with a lower probability of spontaneous remission. An additional traumatic event was associated with an eight percent decrease in the likelihood that PTSD would remit without treatment [47]. Thus, treatment plays a critical role in recovery for many.

However, getting treatment from the VA that matches a veteran's particular needs and barriers can be difficult. As stated above, the VA has devoted unprecedented amounts of effort and resources to widely disseminate standard PE and CPT [20,48]. This priority has left many veterans having to choose exclusively between PE and CPT for PTSD treatment or wait extensively on the limited availability of other options [14]. Accordingly, the VA's heavy focus on PE and CPT has received academic criticism. Some scholars question the superior efficacy of PE and CPT over other treatments with published studies, underscoring that a significant population of veterans require alternative treatments. Accordingly, they encourage the VA to recognize shortcomings that could limit such treatments' tolerability and effectiveness [14,37,42]. In their standard format, both options can only address the needs of a limited number of veterans [19,36]. The VA's lack of individual tailoring in

PE and CPT delivery and limitations on alternative options can result in high attrition rates, given the barriers previously addressed [12,37,42]. PE and CPT, delivered in their standard weekly protocols at an outpatient facility, do work for many veterans. Yet, they certainly do not work for *all* veterans. Thus, the wide variety of veteran needs may be better addressed through greater flexibility in the range of therapeutic strategies offered, as well as by placing a greater emphasis on—and increasing the availability of—those options. Unfortunately, recent literature exploring barriers to treatment at the VA suggests that approaches targeting these barriers are not consistently available [22,37,42].

6. Pathways Forward: Options for Reducing Attrition

To address attrition from trauma-focused therapies, the VA may benefit from strategies that lessen veterans' barriers to treatment. We recommend the VA increase the variety, emphasis, and accessibility of alternate treatment options at more sites. These recommendations include the addition of more modified first-line therapies, a wider range and availability of treatment delivery modalities, and greater emphasis on alternative treatments. Specifically, to address practical barriers, we recommend the following additions: the modification of standard PE and CPT into shorter session lengths and/or intensive protocols, expanding the provision of PE and CPT via teleconferencing services (telehealth) and smartphone applications, and offering intensive PE and CPT treatments through remote technologies. To address psychological barriers, we recommend that the VA place emphasis on offering (1) Motivational Interviewing (MI) prior to and in support of PE and CPT, (2) Acceptance and Commitment Therapy (ACT), and (3) a combination of alternative treatments to facilitate engagement in PE and CPT, such as acceptance processes from mindfulness-related therapies or involving loved ones in trauma-focused treatment. Intensive protocols may address psychological barriers as well.

7. Addressing Practical Barriers

7.1. Shortening the Duration of Sessions and Protocols

Given the practical barrier of veteran's limited time, it is appropriate to question the necessity of the standard duration of PE and CPT. Currently, standard treatments last around eight to fifteen sessions for PE and 12 sessions for CPT, each once per week [8]. To complete these standard protocols, veterans must manage practical inconveniences such as taking time off from work, managing familial obligations, and relying on partners or coworkers for up to 15 weeks or more [8,37]. Given that the duration of PE and CPT protocols are described by their procedures (i.e., the number of sessions and their content) and not their length of time, both treatments could theoretically be shortened. One option is to shorten the duration of individual sessions. In fact, PE has been shown to be as efficacious with 60-minute sessions as with its standard 90-minute session length [49]. Another option is to shorten the overall length of treatment with intensive protocols—versions of standard protocols that have been condensed in total treatment time. Intensive protocols aim to achieve the same therapeutic goals in much shorter amounts of total time [9,10,50–52]. Generally, intensive protocols involve having two to three sessions per week on average, rather than one. Thus, an entire treatment protocol can be completed in weeks instead of months.

Intensive protocols can be as simple as traveling to the local VA outpatient clinic multiple times a week or enrolling in an intensive outpatient program (IOP) for integrative care. Weinstein and colleagues [51] examined an example of the former option. In their study, veterans diagnosed with PTSD attended an orientation class that familiarized them with their diagnosis and gave an overview of available VA treatments. Although the typical format of CPT was available at 12 sessions once a week, veterans could also choose an intensive option with three to five sessions a week. Alternatively, veterans could choose to attend an IOP. IOPs are intensive treatment programs which offer adjunctive interventions such as yoga and mindfulness classes, in addition to the primary EBPs [51,53,54]. Yamokoski et al. [55] describe a clinic in which two intensive protocols were offered. The

shorter option held five treatment days per week and took around two weeks to complete in total. The longer option held three treatment days per week, lasting about four weeks in total. The patients also had the option of either staying at the clinic as residents or living elsewhere, commuting to and from treatment. Each treatment day included two hours of group therapy in addition to individual sessions of either PE or CPT. Group sessions were used primarily to support individual therapies, such as clarifying treatment rationales, progress reviews, or addressing any difficulties patients might be experiencing. Outside therapy sessions, patients also worked on homework assignments and/or presented to psychiatry appointments [55].

Although intensive PE and CPT protocols have a much shorter treatment duration, they appear to be at least as efficacious as their standard counterparts. Intensive PE and CPT only vary in the frequency of doses [51,56]. They maintain the essential manualized nature and tasks of the standard protocols. In the case of IOPs, adjunctive services such as support groups are often offered to complement the intensive treatments. However, these do not detract from the efficacy of the treatment. Studies examining the efficacy of intensive PE and CPT protocols have found that they achieved the same results as standard treatments, yet with the added benefit of lower attrition rates [51,55,56]. In a controlled experimental study testing the efficacy of intensive PE, Foa and colleagues [56] reported an attrition rate of just 13.6%. The IOP that Yamokoski and colleagues [55] examined reported an attrition rate of 12.7%. Both figures demonstrate the potential for intensive protocols to lower dropout rates.

Even so, it is yet unclear to what degree these intensive formats specifically address veterans' practical barriers. Unlike standard formats, veteran perceptions of intensive protocols are relatively unknown. While some studies do ask participants their thoughts on the treatment format, only a few ask specific questions about the impact of practical barriers [55,57]. One qualitative study interviewed veterans who declined to attend an IOP [54]. Some veterans stated that barriers such as work and familial commitments meant they could not fully commit two to three weeks of their time, even though the overall time was much shorter than the standard format. Even so, in the case of IOPs, there seem to be enough veterans participating to warrant this treatment format [50,52,55,58,59]. Moreover, their lower attrition rates suggest that these formats should not be overlooked [50,52,55,56].

7.2. Expanding Telehealth and Smartphone Technology Support

Even with the addition of intensive protocols, there will still be a population of veterans who cannot receive treatment due to travel and timing issues. Telehealth is one possible solution for this state of affairs. Telehealth uses electronic communication and information to support remote clinical services with technology [60]. A common example of telehealth is conducting a psychotherapy session over a secure videoconferencing platform. It can also involve simple telephone calls, text messaging, or smartphone apps. Fortunately, the VA does offer a broad variety of telehealth options [61]. In some facilities, they even provide internet services and tablet computers to veterans who do not have adequate internet service at home. They can provide guidance on using this technology as well (the "Digital Divide Consult" program) [62]. Although these are promising and useful options, many specific facilities do not provide telehealth or Digital Divide services [62]. The expansion of these services may further reduce practical barriers.

By bringing therapy into the home, telehealth does not require veterans to leave their homes for treatment. This advantage addresses any barriers stemming from the inconveniences of travel. To see the effects of telehealth on practical barriers, Hernandez-Tejada and colleagues [48] compared factors of attrition in veterans participating in in-person and at-home PE. As expected, veterans attending in-person PE reported twice as many issues with travel and familial obligations than those attending at-home PE. The authors added that veterans attending at-home PE would have reported fewer practical barriers had they not had to travel to the clinic to complete research-related assessments. Furthermore, telehealth services in the home may allow family members or significant

others to participate more easily in relevant sessions. With the few available studies reporting attrition rates as low as 4.2%, it is likely that removing the practical barriers may have allowed veterans to have an easier time completing treatment [63].

Due to the often-stressful nature of PE and CPT, one concern about telehealth is that veterans may feel more comfortable attending in-person therapy. Certain veterans may also be uncomfortable using unfamiliar technology. However, most of the evidence suggests that in-person therapy and videoconferencing have been equally acceptable to veterans [64]. Furthermore, studies examining the efficacy of at-home PE found similarly large effect sizes to that of in-person therapy [65]. Similar results were observed with CPT delivered through telehealth [63]. As with intensive protocols, both PE and CPT remain manualized in telehealth. This means that—if followed correctly—the only difference between in-person and telehealth therapies would be the modality of delivery.

Lastly, the VA has also bridged gaps in care by developing over 20 interventional smartphone apps in partnership with the National Center for PTSD (e.g., *PTSD Coach*) [66–68]. These apps provide psychoeducation, symptom tracking, and coping tools for PTSD and other related mental health concerns, free of cost. VA mental health apps have been shown to be sufficiently feasible for veteran use and acceptable to veterans, with preliminary evidence of efficacy and effectiveness (particularly for *PTSD Coach*) [66]. These VA apps do not provide PE or CPT protocols themselves. Rather, they broadly support veterans in understanding and coping with post-trauma psychopathology as symptoms occur. The VA does have apps that are designed as companions to mainline PE and CPT (namely, *PE Coach* and *CPT Coach*) [68]. Patients use these apps alongside therapist-led treatment. The apps aim to help support the completion of treatment tasks, particularly those engaged outside of the session.

Increasing awareness of, access to, and use of these apps is still an important—and rather large—task for the VA. Reger et al. [69] found that only 20.4% of veterans in VA mental health care had used any of the apps, with only 42.5% reporting that they had even heard of them. Furthermore, usage was quite low among veterans with specific diagnoses using the respective apps: only 7.5% of veterans diagnosed with PTSD had used *PTSD Coach*. According to Reger et al. [69], the primary reason for low use was that veterans were simply unaware these apps existed. Fortunately, there have been some preliminary efforts by research teams to train VA staff to promote and use the apps across medical and psychotherapeutic domains (e.g., nurses, chaplains, social workers, etc.). These beginning training efforts are largely successful at equipping providers and encouraging app promotion [70]. In McGee-Vincent et al.'s [70] study, 98.3% of trained staff planned to use the VA mental health apps with at least one specific veteran under their care (81.3% endorsed that they “definitely will”). The VA may be able to expand treatment access and reduce attrition further by promoting awareness of, training in, and use of these apps to a greater degree. They may also benefit veterans by developing apps that can deliver full PE and CPT asynchronously, independently of a therapist. Yet the effectiveness and safety of this delivery method have yet to be empirically examined and supported, necessitating further testing.

7.3. Offering Intensive Protocols Using Telehealth and Smartphone Technology

As previously addressed, intensive in-person PE and CPT protocols do not fit every veteran's schedule or lifestyle: They still require the constraints of travel time, transportation, and mobility. However, it may be possible to deliver these intensive protocols through telehealth. Recent research has explored this option. One of the few studies that have tested this modality discovered that it may be efficacious and effective [63]. Gathering 24 civilians with a history of sexual trauma, Held and colleagues [63] administered two sessions of CPT per day via telehealth for a total of five days. They reported significant effects for PTSD symptom reduction, with 15 out of 20 participants no longer meeting the diagnostic criteria at the end of treatment. Additionally, only one participant dropped out [63]. Another study, employing the same treatment format, reported similar promising results [71]. Research

thus far suggests that intensive protocols are likely as efficacious as standard protocols and have lower attrition rates. PE and CPT administered through telehealth have also matched the efficacy rates of standard delivery methods, yet boast lower attrition as well. Combining the two options may allow veterans to participate in a brief but efficacious treatment without having to leave their homes. One could presumably still go to work, come home, and spend one to two hours on treatment without spending the time traveling.

8. Addressing Psychological Barriers

8.1. Intensive Protocols to Address Psychological Barriers

8.1.1. Avoidance and Procrastination

In addition to countering practical concerns, intensive protocols may also address psychological barriers to PE and CPT. As previously noted, patient avoidance and procrastination toward therapy tasks are issues that can routinely arise during standard PE and CPT. Accordingly, the amount of time between therapy sessions has been significantly associated with higher attrition rates. One study examining the spacing of CPT sessions found that a three-day increase past the usual seven-day gap between sessions equated to a 15% increase in the risk of dropping out [72]. The exact reasons for this effect have yet to be uncovered. However, it is quite plausible that a weeklong break provides opportunities for veterans to procrastinate and avoid their difficult assignments and treatment sessions, given their aversive nature. It is also possible that veterans can simply become distracted or overburdened by other, competing activities and obligations. Finally, when veterans miss a session due to unavoidable circumstances, they often must wait another week to attend another session, equating to two weeks without therapy [51].

The rapid pace of intensive protocols may lessen opportunities for veterans to avoid or procrastinate on homework and exposure. Veterans participating in the intensive CPT program examined by Weinstein and colleagues [51] completed approximately 3.01 sessions a week, equating to one session every 2.3 days. This forced them to prioritize completing their homework assignments. It was further hypothesized that the low attrition rates were attributed to the short breaks between sessions. These breaks limited veterans' time "away" from therapy—time during which they could be consumed by other obligations or distractions. Intensive protocols may also instill a mindset of driven commitment to "get it over with," much like "ripping off a band-aid." The ability of intensive protocols to address avoidance was also supported by a recent qualitative study. Sherrill and colleagues [73] examined veteran perceptions of the IOP at the Emory Healthcare Veterans Program. Their team interviewed 25 veteran participants of the IOP. Veterans reported that the lack of time between sessions forced them to commit to completing their homework. They also stated that it limited opportunities to avoid sessions and homework, as theorized.

8.1.2. Perceived Lack of Improvement and Motivation

Another psychological barrier that veterans may face is a perceived lack of improvement or slower-than-desired progress in PE or CPT. For some, it may take an extended time to see significant reductions in symptomology [74]. Others may simply not tolerate the usual pace of treatment progress. An initial slow pace of improvements can be discouraging for some veterans. They may be especially demoralized by slow gains if they have low treatment expectancy, feel they are undertaking notable distress and working hard, or must make practical sacrifices to attend treatment [38,42]. Some studies estimate that meaningful improvements are not seen before the fourth or fifth session [45]. Other studies state that it takes around 6.8 sessions to achieve a 50% reduction in symptomology [74]. In a standard treatment protocol, this can mean veterans may have to wait anywhere from four to five weeks before they start to see improvements.

With condensed intensive PE and CPT protocols, improvements in symptom reduction tend to happen quickly—often as quickly as one to two weeks. A head-to-head trial pitting intensive PE and standard PE against each other showed that, while both treatments yielded the same improvements in symptoms, intensive PE achieved its results in two

weeks instead of eight weeks [56]. Furthermore, the intensive treatment administered by Held and colleagues [63] yielded a five-point reduction in scores per day on a self-reported PTSD measure. This eventually resulted in 15 out of 20 participants no longer meeting the diagnostic criteria for PTSD after the study [63]. Both studies demonstrate the ability of intensive CPT and PE treatments to produce rapid improvements. This quick change may have a beneficial effect on veterans' motivation: They experience the fruits of their labor, receiving both positive and negative reinforcement for approach behavior. As a result, they may be more willing to fully participate in exposure-based activities, as well as to do so longer and practice them more frequently [73].

8.2. Motivational Interviewing Prior to Trauma-Focused Treatments

Many veterans may refuse trauma-focused treatments due to ambivalence—holding multiple motivations that oppose one another (“mixed feelings”). On one hand, they may acknowledge the likely recovery benefits of PE and CPT. Yet, on the other, they may fear that engaging with their trauma will be too burdensome in distress, life interference, or other costs. Research has found that veterans often report ambivalent, mixed positive and negative feelings about engaging in trauma-focused therapy [75]. Such ambivalence toward treatment predicts limited engagement in psychotherapy, lower efficacy of action-oriented therapies like behavioral and cognitive interventions, and patients completing fewer of their therapy homework tasks (i.e., noncompliance [76]; see Engle and Arkowitz [77] and Westra and Norouzian [78] for reviews). Ambivalence can be the root of not only refusing to initiate therapy, but also of attrition and limited gains as well. A portion of VA sites do offer preparatory classes prior to PE or CPT [22]. Yet these courses (1) vary widely in what they offer, ranging from basic psychoeducation to teaching skills for symptom management, (2) do not routinely include strategies for resolving ambivalence toward PE or CPT, and (3) mainly reduce attrition by preventing the initiation of PE or CPT when providers believe, a priori, that certain veterans could not tolerate trauma-focused treatment [22]. Lowering attrition by lessening initiation is not the same as lowering attrition by supporting effective participation. Yet other strategies that directly address ambivalence do exist.

Motivational interviewing (MI) is a treatment technique that helps patients resolve ambivalence toward committing to a course of action or life change [79]. MI uses open conversation to gently guide clients toward realizing their own personal reasons to change. It then helps them gather the motivation to commit to action. Although it can serve as a standalone treatment, it has also been effectively integrated with other treatments to support their aims (see the review and meta-analysis by Marker and Norton [80]). The VA may help veterans overcome psychological barriers to trauma work by preceding that work with MI or similar motivational enhancement therapies. In fact, adding sessions of MI that target therapy ambivalence to the beginning of therapy protocols has outperformed therapy alone in several clinical trials [80]. For example, Westra, Constantino, and Anthony [81] conducted a randomized controlled trial that experimentally controlled for total therapy time across these two conditions—four sessions of MI followed by 11 of CBT in one condition versus 15 sessions of CBT in the other. They found that MI plus therapy not only led to greater efficacy than therapy alone but had less than half the rate of attrition. Integrating MI into treatment has been shown to be helpful in treating PTSD in a veteran population as well. Murphy and colleagues [82] compared veteran participation in an MI-based motivational enhancement group to a psychoeducation group during treatment for PTSD. They found that the MI group had greater readiness to change via therapy, greater perceived relevance of the treatment to their needs, and greater therapy attendance than the group without MI. Such methods require further research and empirical support in veteran populations, particularly regarding integration with PE and CPT. Even so, they are promising options for further study on reducing attrition among veterans.

8.3. Acceptance and Commitment Therapy as an Alternative Treatment

Veterans with PTSD may also be well-served by greater access to evidence-based treatment alternatives, such as Acceptance and Commitment Therapy (ACT). ACT is a mindfulness-based CBT that encourages accepting unwanted internal experiences in order to pursue valued actions [83]. The main goal of ACT is to increase patients' *psychological flexibility*: the ability to freely carry out any valued behavior regardless of one's psycho-emotional state. It is often achieved by decreasing patients' experiential avoidance, which occurs when an individual is unwilling to engage in an activity due to the associated feelings or thoughts. The person attempts to alter or escape undesirable stimuli or activities in order to avoid experiencing the unwanted feelings or thoughts associated with them. Experiential avoidance often hinders the pursuit of one's personal goals and values, such as the beneficial activities or relationships that may trigger veterans' PTSD symptoms [84]. Avoidance can also render exposure exercises ineffective [43,44]. To help patients increase their psychological flexibility and decrease experiential avoidance, ACT trains patients in six skill processes: contacting the present moment (i.e., the attentional components of mindfulness), defusion (i.e., disobeying and distancing from one's automatic thoughts and motivations), self-as-context (flexible identity), identifying one's values, committed action to engage with those values, and acceptance [85,86]. The latter process—acceptance training—may be especially useful for trauma-focused treatment, including the reduction in attrition from EBPs.

Acceptance is a willingness to experience unwanted internal states. It is a mindset of “opening up” to undesirable thoughts and feelings for one's own good [86]. Acceptance is often included in the service of engaging in actions that would be helpful, even if those actions are difficult or painful. One way ACT differs from other treatments is that symptom reduction is not its main treatment priority. Instead, the main priority is increasing the number of patient's available behavioral responses, which is achieved through acceptance [83,85]. For example, if a veteran with PTSD suffers from re-experiencing symptoms, ACT therapists may not focus directly on reducing such symptoms. Instead, they teach veterans how to peacefully co-exist with such symptoms by accepting them. This allows the patient to flexibly do whatever they need to do regardless of their symptoms. Whereas avoidance is a resistance to—and escape from—experiences, acceptance is a willingness to have them for the sake of a better life. Acceptance may facilitate a return to work, greater engagement in important relationships, or time in forgone leisure activities, among other helpful behavioral changes.

ACT may help veterans live their lives well, even if they do not entirely remit from PTSD. Yet even despite ACT's alternative goals, symptom reductions *are* quite often observed as a treatment “byproduct” [83]. Twohig and Leven's [87] review of 36 randomized controlled trials concluded that ACT was efficacious for a variety of anxiety and depressive disorders. These ameliorative effects appeared to be significantly mediated by increases in psychological flexibility. Even though ACT may not always *target* PTSD symptoms, it can address some of the critical patterns heavily associated with the development and maintenance of the disorder—including avoidance and psychological inflexibility [84,88,89]. ACT's emphasis on psychological flexibility and experiential avoidance makes it fit for treating avoidant coping styles, which maintain the strength of trauma-related associations and their resulting symptoms [84,90,91].

Accordingly, ACT has shown benefits specifically in veterans with PTSD. Meyer and colleagues [83] treated 43 veterans with comorbid PTSD and Alcohol Use Disorder (AUD) with ACT. They reported large effect sizes for symptom reduction on clinician-reported and self-reported measures. Other studies that have examined ACT in the context of PTSD reported that, after ACT, veterans were able to become more tolerant and open to trauma-related thoughts and interpersonal interactions, increasing their quality of life [92]. They also thought highly of the treatment. The ability of ACT alone to address veterans' psychological treatment barriers has yet to be extensively examined. However, preliminary evidence suggests using ACT to treat PTSD may yield attrition rates lower than those of

PE and CPT. In one of the studies by Wharton et al. [92], they only recruited veterans who had previously dropped out of PE or CPT. Although the attrition rate from registration was 18.2%, all the veterans who dropped out did so before the treatment began. Thus, every veteran who began treatment was able to complete it. However, while some VA facilities do provide general ACT treatments that are independent of targeted PTSD, the VA still does not consider ACT a suitable treatment for PTSD [9]. The availability of ACT-related treatments and providers is also limited across sites.

Yet ACT may actually aid the mechanisms of the VA's widely disseminated PTSD treatments. Repeated exposure to trauma stimuli, memories, and beliefs are often not the primary foci early on in ACT treatment, as they are in PE or CPT. Thus, ACT could serve as an alternative or precursor for veterans who are more resistant to trauma-focused protocols. ACT processes may promote better investment in the exposure-based components of PE and CPT later on. In fact, ACT often *does* include exposure therapy if advisable for the patient, supported by patients' prior training in acceptance and valued-action commitment [86]. ACT processes dovetail with exposure quite well: In one study, exposure exercises were even used as opportunities to practice defusion and self-as-context [86]. Most importantly, ACT's ability to train an acceptance mindset may help veterans be more likely to fully engage in exposure and less likely to drop out. In addition, patients identifying their values in ACT may *motivate* veterans to face difficult trauma work. Such work is often a values-driven action—one requiring much commitment. When performed for “a higher purpose,” exposure may not be abandoned as readily. In short, ACT may facilitate trauma-focused treatments in ways that reduce attrition. One study by Ramirez and colleagues [93] examined this question directly. In response to heavily increasing attrition rates from the IOP at Brooke Army Medical Center, Ramirez et al.'s team combined ACT and exposure therapy. Of the 311 veterans involved, only 12 voluntarily dropped out. Their veteran participants reported being less avoidant and less reluctant to engage with exposure because of the specific ACT processes they had learned and practiced.

8.4. Combining Components of Other Therapies

Thus far, we have addressed how MI and ACT components may reduce psychological barriers to PE and CPT. In particular, we noted how pre-empting direct trauma work with motivational enhancement or training in acceptance could foster greater engagement and lower attrition. This practice of combining intervention components with mechanisms of PE and CPT could involve those of other treatments as well. Theoretically, components of different treatments could be combined in a variety of sequences to facilitate one another. The extent to which the VA uses this combination strategy is limited, with the updated 2023 VA clinical guidelines neither encouraging nor discouraging this strategy. At the time of this review, the VA has yet to support combined psychotherapies within their clinical guidelines for PTSD [9,94]. Yet in addition to components of MI and ACT, the following practices may support trauma-focused intervention for veterans.

8.4.1. Mindfulness-Based Techniques

One option is adding or pre-empting PE and CPT with mindfulness-based techniques. Broadly defined, mindfulness is a state in which one purposefully attends to their present situation while adopting a nonjudgmental, accepting mindset [95]. Though there are a number of mindfulness-based treatments (mindfulness-based stress reduction, mindfulness-based cognitive therapy, etc.), all include the practice of acceptance. Acceptance occurs in mindfulness when one willingly allows the presence of unwanted internal experiences noticed in the present moment, forgoing urges to resist or change them [86]. Mindfulness-based treatments can comprise several components and delivery methods, such as meditations, yoga, or group discussions [96,97]. As such, mindfulness practices may be a logical treatment to pre-empt or combine with trauma-intensive treatments like PE and CPT. Like ACT, the emphasis that mindfulness practices place on acceptance makes it ideal for veterans who may struggle to cope with or avoid treatment. Learning to be

nonjudging and accept one's internal experiences may help override the default avoidance behaviors, such as emotional numbing or not going to treatment [43,96]. Thus, the prospect and act of facing trauma-related stimuli may not be as distressing for veterans proficient in this skill, making the subsequent PE or CPT treatments much more effective. Currently, a number of studies that have examined the efficacy of mindfulness-based treatments on PTSD have found that mindfulness practices are indeed effective for PTSD in veteran and civilian populations [96–98]. In particular, Hopwood and Schutte [97] conducted a meta-analysis of 18 randomized controlled trials testing mindfulness-based interventions on PTSD. They reported a medium effect size on symptom reduction. Thus, although PE and CPT may outmatch their efficacy, mindfulness-based interventions may still be efficacious when PE or CPT may be refused—both as a standalone treatment and an adjunctive one.

8.4.2. Components of Dialectical Behavioral Therapy

DBT is a cognitive-behavioral treatment that mixes behavioral and crisis intervention theories with Eastern meditative practices and philosophies. Like ACT, it is partly based on mindfulness and has the facilitation of acceptance among its aims. Though most often used to treat borderline personality disorder (BPD), there are elements of DBT that may be appropriate for treating PTSD. The acceptance of unwanted internal experiences (like negative emotions, sensations, and cognitions) is certainly an important one. DBT also promotes and trains the acceptance of the external world as it is in the present moment, even if one aims to make changes. This form of acceptance is known as “radical acceptance” in DBT. Radical acceptance may help veterans come to terms with the hard reality that their trauma occurred, even if they are recovering. Their trauma is a fact of history that cannot be changed, yet one with which they can make peace.

In addition, DBT includes tools beyond internal acceptance and radical acceptance that may also be beneficial. For example, many of its skills-training components are intended to teach patients the skills to successfully manage the external and internal experiences of life, including interpersonal relationships, emotion regulation, and the tolerance of distress. Issues fitting these domains are common in PTSD. PTSD symptoms often negatively affect interpersonal effectiveness and the ability to cope with heightened distress [1,4–6,40]. As previously noted, veterans who dropped out of PE and CPT treatments have stated that they were concerned about how treatment distress would affect the other areas of their lives [37]. DBT skills training can prepare veterans to cope with the distressing emotions and situations that arise from their trauma, as well as from partaking in trauma-focused treatment [43,44]. Many of the skills from DBT may empower concurrent or subsequent trauma-focused work.

8.4.3. Components of Family and Couples Therapies

Lastly, veterans may be assisted in overcoming psychological barriers such as avoidance by incorporating family members or significant others into their trauma-focused therapy process [38]. Individuals close to the veteran may provide encouragement and support throughout the veteran's trauma processing or exposure therapy. They may motivate patients to complete difficult exercises, both during sessions and in the veteran's familiar environment. Significant others and family may also remind the veterans of their values and reasons for pursuing recovery. They can also encourage the veteran to remain in treatment despite the discomfort of facing trauma, preventing attrition. In fact, Meis and colleagues [99] found that, when veterans were encouraged by loved ones to approach anxiety-provoking situations, they were more than twice as likely to complete PE or CPT.

Including close others in treatment may also change family behaviors that interfere with treatment success. Loved ones often unwittingly reinforce PTSD symptoms by enabling and fostering veterans' avoidance—removing behavioral trauma cues from the veteran's environment, completing tasks outside the home so the veteran does not have to leave the home, warning the veteran of future trauma cues and discussing ways to avoid them, etc. These efforts are often well-intentioned and aim to reduce the veteran's distress.

Even so, such behaviors work against veteran recovery by negatively reinforcing symptoms via avoidant relief. Including family members and partners in therapy can provide psychoeducation on the effects of avoidance and the benefits of approaching feared stimuli. This education may help stop loved one's counterproductive efforts to enable avoidance. Preliminary studies on involving loved ones in trauma-focused veteran treatments are promising. For example, Thompson-Hollands (2021) found that adding a two-session adjunctive intervention with family members to the beginning of PE or CPT led to 20% less attrition than standard PE or CPT without family sessions [100]. Currently, Meis et al. [101] are running a randomized controlled trial to test whether Family-Supported Prolonged Exposure reduces symptoms and attrition relative to standard, individual PE.

9. Conclusions

Many veterans experience traumatic events both in and out of service, including combat trauma, accidents, natural disasters, sexual trauma, or other misfortunes. Given that untreated PTSD is not likely to remit, treatment is often necessary. A significant portion of American veterans seek trauma-focused treatment for their PTSD from the VA. To its credit, the VA has made powerfully efficacious treatments like PE and CPT widely available, helping a great number of veterans in need. Yet the VA's dissemination approach (often called "one-size-fits-all") may not serve all veterans optimally. Due to the small number of psychotherapies broadly available and the wide variety of veteran needs, treatment attrition rates with PE and CPT remain relatively high. Many veterans drop out of treatment prematurely due to practical and psychological reasons that are all related to the often-high burdens of undertaking standard PE and CPT. However, treatment barriers can be lessened by increasing the variety and emphasis of available psychotherapies, as well as their delivery modalities, in ways that match veteran needs. In summary, we recommend the VA consider placing greater emphasis on modifying standard PE and CPT into shorter session lengths and/or intensive protocols, expanding the provision of PE and CPT via teleconferencing services (telehealth) and smartphone applications, and offering intensive PE and CPT treatments through remote technologies. We also recommend the VA consider offering Motivational Interviewing prior to—and in support of—PE and CPT, expanding access to Acceptance and Commitment Therapy (both ACT targeting PTSD and ACT to facilitate later exposure-based treatment), and offering other forms of treatment component combinations that facilitate engagement in PE and CPT. We encourage future research investigating the effectiveness, feasibility, and acceptability of all these approaches within veteran populations. It is our hope that these efforts will lead to lower attrition among those who deserve the benefits of a full and fitting treatment.

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